

K. THOTHATHRI*: **Studies in Leguminosae (24).**
Notes on the Indo-Burmese species of *Derris***

K. トタトリ*: マメ科植物の研究 (24).
インド・ビルマ産のデリス属植物

Three new varieties in the genus *Derris* Lour. [*D. scandens* (Roxb.) Benth. var. *toppinii* Thoth., *D. scandens* (Roxb.) Benth. var. *shanicus* Thoth. and *D. acuminata* Benth. var. *sikkimensis* Thoth.] are described. The taxonomic status of *D. acuminata* Benth. is discussed. *D. wightii* Baker is reduced to a variety under *D. benthamii* (Thw.) Thw. A detailed description together with an illustration is provided for *D. hainesiana* Thoth., since the original description (Haines, 1922) was scanty. *D. elliptica* (Wall.) Benth. and *D. hainesiana* Thoth. are recorded for the first time from the Great Nicobar Island and Nepal respectively. A neotype is chosen for *D. canarensis* (Dalz.) Baker.

1. ***Derris scandens* (Roxb.) Benth. var. *toppinii* Thoth. var. nov.**

A var. *typica* differt pannis linearibus glandium flavarum in calyce et corolla, foliolis obliquis basi inaequalibus et utrinque puberulis.

A scandent shrub. Leaves alternate, stipulate, 18–26 cm. long; leaflets 13–15, ovato-oblong, 3.5–7.5×2–2.8 cm., entire, acute at apex, oblique and unequal at base, finely puberulous on both surfaces; stipels prominent, hair-like. Inflorescence an axillary raceme, upto 21 cm. long, rachis puberulous. Flowers 1.0–1.3 cm. long, pedicellate. Calyx campanulate, 2.5–4.0 mm. long, 5-toothed, teeth triangular, pubescent without and linear patches of yellow glands within. Corolla vexillum ovate to ovate-oblong, 1.0–1.2 cm. long, silky on the back at times; wings oblong; keels widely oblong, linear patches of yellow glands present on the inner surface of the blade of all petals. Stamens 10, monadelphous, sheath 9–10 mm. long, vexillary filament free at base. Ovary 1.0–1.1 cm. long, linear, grey-pubescent; style bent upwards; stigma minute; ovules 2.

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Type: Chindwin, Bhamo district, Burma, 1911-12—Toppin 3142 (Holotype, CAL).

The new variety is so far known only from Bhamo district in Burma. The presence of linear patches of yellow glands is one of the distinctive features of this variety.

2. *Derris scandens* (Roxb.) Benth. var. *shanicus* Thoth. var. nov.

A var. *typica* differt foliulis membranaceis, inflorescentiis gracilibus et floribus portatis in pedicellis gracilibus.

A scandent shrub. Leaf alternate, stipulate, 9-12 cm. long; leaflets 13-18, ovate, entire, membranous, acute at apex, truncate below, glabrous above, puberulous below, 2-3.2×1.2-1.6 cm. Inflorescence an axillary raceme, much slender than in the typical plant, 8.5-10 cm. long. Flowers upto 1 cm. long, pedicellate; pedicels very slender as compared to in the typical plant, 4-6 mm. long. Calyx campanulate, 3 mm. long, mostly glabrous, rarely puberulous but not silky as in the typical plant. Corolla vexillum 8-9 mm. long, ovate-oblong; wings narrowly oblong; keels widely oblong. Stamens 10, monadelphous, sheath 9 mm. long, split open above. Ovary 8-9 mm. long, linear-oblong, glabrous except the pubescent sutures; style and stigma glabrous; stigma minute; ovules 4-6.

Type: Taungyi, 1830 m., South Shan States, Burma, Apr. 1910—R. W. MacGregor 940 (Holotype, CAL).

Specimen examined: Without precise locality, South Shan States, Burma—MacGregor 621 (CAL).

Distribution: South Shan States, Burma.

The different varieties of *Derris scandens* (Roxb.) Benth. can be distinguished as in the key. Apart from the typical one, *D. scandens* var. *saharanpurensis* Thoth. has already been published (Thothathri, 1970, 1971). The remaining 2 varieties are described above.

Key to the varieties of *Derris scandens* (Roxb.) Benth.

- A. Leaflets equal at base, puberulous beneath; linear patches of yellow glands absent in calyx and corolla
 - B. Leaflets subcoriaceous; rachis of the inflorescence stout
 - C. Pod laterally constricted between the seeds; pedicels slender, upto 1.1 cm. var. *scandens*
 - C. Pod not laterally constricted between the seeds; pedicels stout, upto

- 0.9 cm. var. *saharanpurensis*
 B. Leaflets membranous; rachis of the inflorescence slender..var. *shanicus*
 A. Leaflets unequal at base; puberulous on both surfaces; linear patches
 of yellow glands present in calyx and corolla var. *toppinii*

3. **D. acuminata** Benth. var. *sikkimensis* Thoth. var. nov.

A var. *typica* differt foliolis 9-11, inflorescentiis brevioribus, floribus majoribus.

Leaf imparipinnate, alternate, stipulate, 20-27 cm. long; leaflets 9-11, oblong, 8-10×3-4 cm., entire, narrow and unequal at base, acute to acuminate at apex, glabrous, petiolule 3-4 mm. long. Inflorescence a raceme,

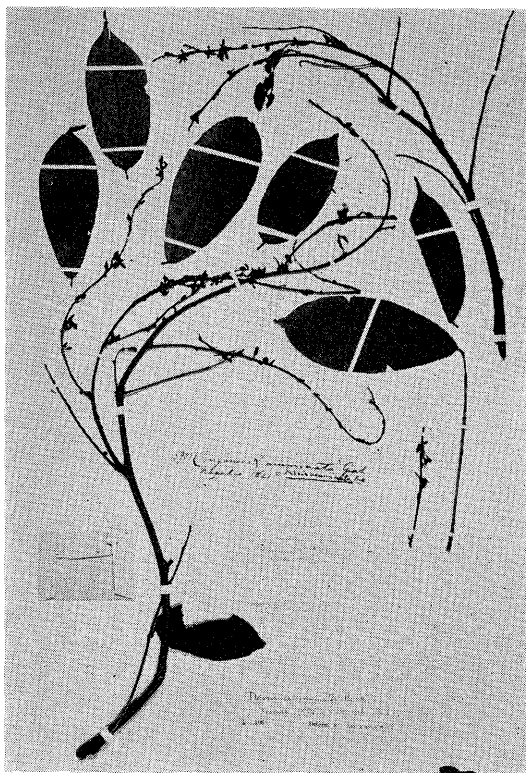


Fig. 1. Lectotype of *Derris acuminata* Benth. (Nepal, 1821-Wall. Cat. 5901-LE).

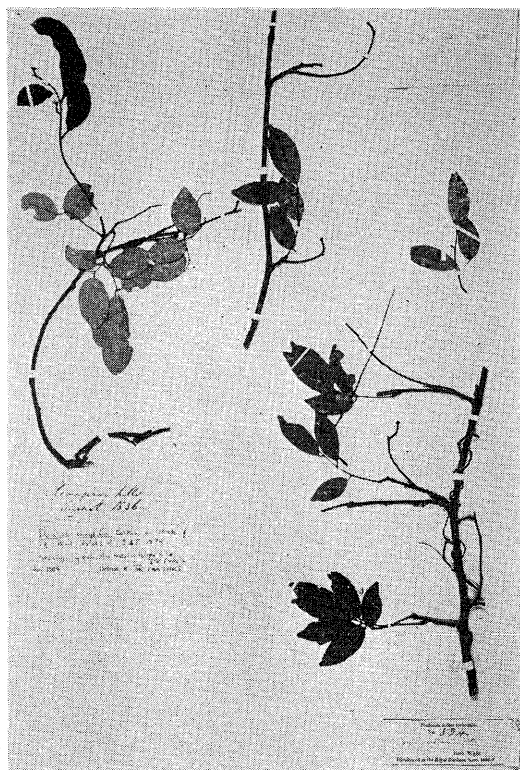


Fig. 2. Isotype of *Derris wightii* Baker (Shevagherry hills, South India, 1836-Wight 834-LE).

axillary, 9-12 cm. long. Flowers bright purple, 1.2-1.4 cm. long, crowded on tumid nodes.

Type: Sikkim, 1666 m., 1852—Hooker s. n. (Holotype, K.)

4. Status and systematic position of *Derris acuminata* Benth.

Bentham (1852) while describing this species placed it under 'species *Derris geminae* (vexillo ecalloso, legumine tenui) sunt'. In his elaborate description later (1860) there was no mention of the presence of callous in the vexillum. The species can therefore never be confused with *D. cuneifolia* Benth. and *D. microptera* Benth. where the vexillum was distinctly callose. Unfortunately Prain (1897) remarked that *D. acuminata* was not a distinct species but only a mixture of *D. cuneifolia* and *D. microptera*.

The author examined the original collections (type materials), present in Kew (Fig. 1) and Leningrad Herbaria and a careful study of the same led him to conclude that *D. acuminata* Benth. did represent a distinct species.

Regarding its systematic position Bentham placed it under the section Euderris near *D. elegans* Benth., while Baker too (1878) grouped it under Euderris but expressed doubt as to its status. Its exact position is under the section Paraderris near *D. lacei* Dunn and *D. lushaiensis* Thoth. wherein the vexillum is ecallose.

5. Taxonomic position of *Derris wightii* Baker

Baker (1878) described this plant as a distinct species but in the absence of flowers placed it under the doubtful category of the section Dipteroderris. Later Gamble (1918) and Thothathri (1962) treated it as conspecific with *D. benthamii* (Thw.) Thw.

The species was based on Wight 834 of which the isotype is present in both the Calcutta and Leningrad Herbaria. The author during his visit to U. S. S. R. in 1967-68 examined Wight 834 in Leningrad Herbarium (Fig. 2). A careful study of this specimen revealed the following facts. There are apparently two different gatherings in this sheet. The one on the left is true *D. wightii* and the one on right possesses leaflets, differing from true *D. wightii* on the left side. As it is only with leaflets, it is difficult to say precisely its identity. There is also a label just below this specimen bearing 'Pen. Ind. Or. Wight 834 (K.D.), *Derris scandens?* Benth.' In spite of this label, the specimen on the left is clearly true *D. wightii* with fruits. The leaflets here are smaller, 5-7 and the inflorescence is only a raceme and not a copiously branched panicle with slender, curved branches as in *D. benthamii*. Further the pod is elliptic when 1-seeded and oblong to slightly curved inwards when 2-seeded. The pods are persistently brown silky and at times reticulated. These characters clearly point out that *D. wightii* can no longer be considered to be same as typical *D. benthamii*. It should be treated as a variety distinguished from the typical plant in its 5-7 smaller leaflets, simple racemose inflorescence with produced nodes.

Derris benthamii (Thw.) Thw. var. *wightii* (Baker) Thoth. stat. et. comb. nov.

D. wightii Baker in Hook. f. Fl. Brit. Ind. 2: 247, 1876; Thothathri in Bull. Bot. Surv. India 3: 186, 1962. *Pterocarpus wightii* (Baker) O. Kuntze,

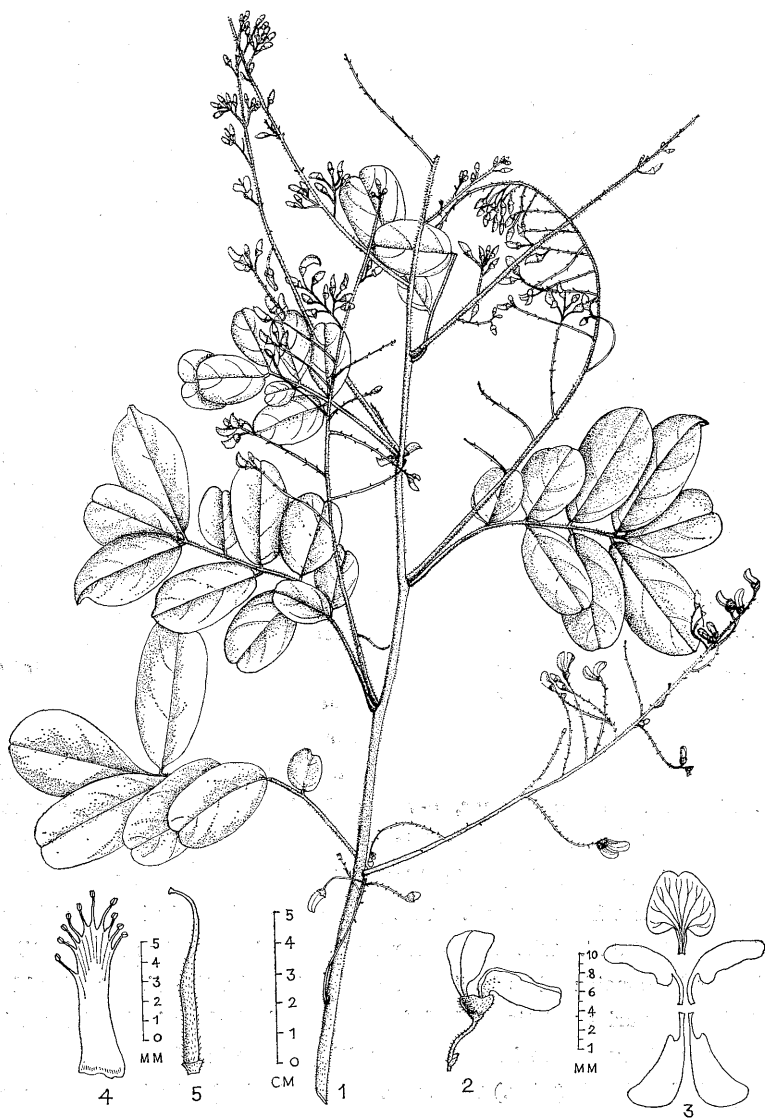


Fig. 3. *Derris hainesiana* Thoth. 1. A branch with flowers. 2. Flower. 3. Corolla with vexillum, wings and keels spread out. 4. Staminal sheath(monadelphous). 5. Ovary with style and stigma.

Rev. Gen. Pl. 1: 204, 1891.

Distribution: South India.

6. **Derris hainesiana** Thoth. in Bull. Bot. Surv. India 3: 198, 1962. (Fig. 3)
D. laxiflora Haines, Bot. Bihar & Or. 3: 299, 1922, non Benth. 1860.

A woody climber; branchlets minutely rusty pubescent. Leaves alternate, imparipinnate, exstipulate, 8-19.5 cm. long, rachis minutely pubescent; leaflets mostly 9-15, rarely 3-5, ovate-oblong to obovate-oblong at times (Shetty 253), 2-7×1.5-3.3 cm., subcoriaceous, entire, rounded to oblique at base, mostly acute at apex, rarely retuse, puberulous above, pubescent below especially on midrib and veins; lateral veins 4-6 pairs, lowest pair of leaflets considerably smaller than upper ones; petiolule 2-4 mm. long. Inflorescence axillary to terminal panicles, 11-18 cm. long, rachis and branches pubescent. Flowers blue to whitish pink, 8-10 mm. long; bract ovate, pubescent, bracteoles 2, minute, just below the calyx cup; pedicels 2-2.5 mm. long, pubescent. Calyx campanulate, oblique at mouth, 2.5-4.0 mm. long, pubescent without, faintly toothed. Corolla vexillum ovate to ovate-orbicular, 9-10 mm. long, retuse at apex, shortly clawed; wings oblong; keels boat-shaped, both wings and keels clawed and auricled at base. Stamens 10, monadelphous, sheath 8-9 mm. long, split open dorsally, filaments free on their upper third, longer filaments alternating with shorter ones, vexillary filament free at base and above having united with the sheath in the middle; anthers versatile. Ovary 9-10 mm. long, densely brown silky; style short; stigma minute; ovules 4-6. Pod oblong, flat, 5×1.8 cm., narrowly winged on both the sutures, 1-seeded.

Type: Ramnagar hills, North Bihar, Nov. 1916—Haines 3946 (Holotype, K).

Flower: November to December.

Distribution: India (Bihar) and Nepal (Kosi-catchment, a new record for Nepal).

Specimens examined: India: Gobardhana forest, 133 m., Champaran district, North Bihar, Nov. 1963—B. V. Shetty 253 (CAL).

Nepal: Bogua Khola, Kosi catchment, Dec. 1964—C. R. Rao 589 (CAL, Herb. Soil Cons. Res. Train. Chatra, Nepal).

Regarding the correct nomenclature of this taxon, the name *Derris laxiflora* Haines (1922) is illegitimate, having been preoccupied by an earlier homonym, *D. laxiflora* Benth. (1860) for an entirely different species from

Formosa. Under such circumstances a new name *D. hainesiana* in honour of Haines was proposed for the Indian plant (Thothathri, 1962).

Haines (1922) did not mention the particular section under which this species was to be placed but discussed only its affinities. A careful study of the characters has led the author to place this species in the section *Dipteroderris*. Its nearest ally is *D. ferruginea* Benth. with which it differs in the glabrous leaflets, inflorescence and pods. According to Haines (1922) there were no flowers in his specimens. The characters of the flowers are therefore given here for the first time, together with a detailed illustration.

7. Distribution and new record of ***Derris elliptica*** (Wall.) Benth.

The plant has so far been reported to occur in Bangladesh (Chittagong), Burma (Attran, Mouelmein, Tenasserim) and Malaysia (Malayan Peninsula, Java, Sumatra, Philippines and New Guinea), Thailand and Cambodia. It never grows wild in India. The report of Kanjilal et al. (1938) in Flora of Assam that it was found throughout the plains of Assam is totally wrong and unsupported by any collection, and whatever collections, found in India are only from cultivated plants. The roots of this plant called, 'the tuba root of commerce' is the source of rotenone which serves as a valuable insecticide for agricultural and horticultural purposes. Hence the plant has very great economic potentialities and so is being cultivated in different parts of India like Assam, Kerala, Madras, Mysore and Punjab.

Recently a collection of this plant from Great Nicobar Island [Great Nicobar—Munshi Ahamadali 23 (CAL)] proves to be interesting as it constitutes the first new record of this plant under wild conditions for India as well as for the Andaman and Nicobar Islands. Further the discovery of this plant under wild conditions in Great Nicobar Island will help in the economy of these islands. The rotenone content of the roots from cultivated plants in India is relatively low (Wealth of India, 1952) as compared to those growing wild in Malaya. Hence the discovery of this plant under wild condition in Great Nicobar Island is not only significant but very important in the production of rotenone in India.

8. Typification of ***Derris canarensis*** (Dalz.) Baker

The type of this taxon should be a collection of Dalzell from Western India. In the original protologue (Dalzell, 1850) he mentioned only 'Western India' after the description. There are no specimens, available either in

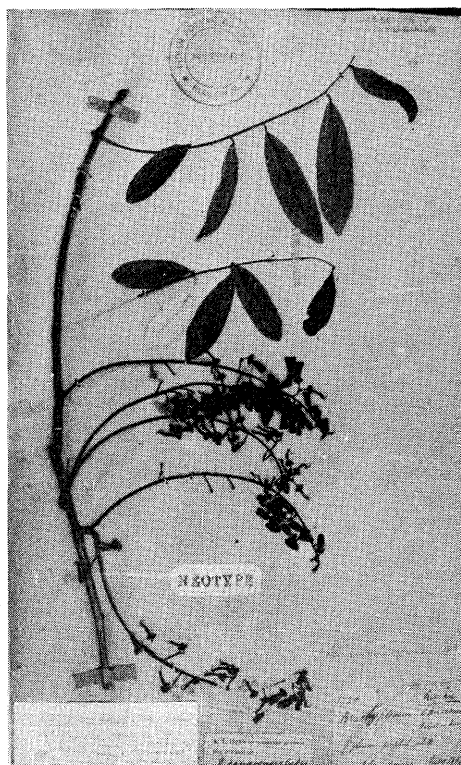


Fig. 4. Neotype of *Derris canarensis* (Dalz.) Baker (Kassarleh, Kanara, Mysore 1853—Dr. Ritchie 1720—CAL).

Kew or Calcutta herbarium. It is further evidenced from the statement of Cooke (1902) which reads as follows "There are no specimens of this plant in Herb. Kew nor have I seen any. The description of Baker (1878) as well as mine was taken from Dalzell's published ones." The author too could not come across Dalzell's collection from any of the Indian or foreign herbaria. Under such circumstances, a careful study of the authentic collections, based on the original description was made which resulted in the selection of Dr. Ritchie's collection from Kanara (1853) as the 'Neotype' (Fig. 4). It is hereby designated as the Neotype to represent this taxon as the collection of Dr. Ritchie was made from the type locality.

Kassarlegh, Kanara, Mysore, May 1853—Dr. Ritchie 1720 (Neotype des-

ignated, CAL).

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インド, ビルマ産のデリス属について 3 新変種, *D. acuminata* の分類上の位置, *D. wightii* の変種へ格下げ, *D. hainensiana* の委しい記載と新分布地, *D. canarensis* のネオタイプの指定などを行う。

口三代伊藤伊兵衛: 花壇地錦抄, 四代伊藤伊兵衛: 草花絵前集, 加藤要校注 pp. 321. 平凡社・東洋文庫 No. 288 (1976, IV) ¥ 900. 園芸書としての花壇地錦抄の名は高い。これはそこに加藤氏が種々の校注を加え, かつは三代伊兵衛が描いた植物の図が, 草花絵前集として出版されたのに対照する番号をつけて一冊にまとめたもので, 利用に便利となった。その書中の椿の類やつつじの類が図鑑や論義がいくつも出版されているから, 牡丹の類なども同じような出版が望ましいものである。二三図の対照が違っているのは残念である。たとえばフタバアオイにカンアオイの図 71 が引用されているなど。

(前川文夫)